THE STATE OF SOUTH CAROLINA

PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY
of
DAVID F. RUSSELL

FILED ON BEHALF OF INTERVENERS SENSOR ENTERPRISES, INC., AND J-RAY, INC.

IN THE MATTER OF

PALMETTO UTILITIES, INC

SCPSC Docket No. 2013-42-S

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is David F. Russell, and my business address is 15 Titcomb Street, Suite 300, Newburyport, Massachusetts 01950.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. I am testifying on behalf of Interveners Sensor Enterprises, Inc., and J-Ray, Inc.

Q. WHAT IS THE NATURE OF YOUR INVOLVEMENT IN THIS CASE?

A. I have been engaged by attorney D. Reece Williams III, counsel for Sensor Enterprises, Inc. ("SEI") and J-Ray, Inc. ("J-Ray"). SEI owns and operates a McDonald's restaurant located at 250 Blythewood Road, Blythewood, South Carolina. J-Ray owns and operates a McDonald's restaurant located at 100 Clemson Road, Columbia, South Carolina. Both restaurants are customers of and receive wastewater service from Palmetto Utilities, Inc.'s ("PUI" or "Company").

I have been retained for this case as an expert consultant and witness in matters related to water and wastewater utility regulation, costs of service, rate design, and billing practices. Specifically, I have been asked to review the manner by which PUI bills Sensor and J-Ray and the appropriateness and reasonableness of their charges as well as to

recommend adjustments to the company's method of determining their total charges, if appropriate.

My involvement includes: the review and analysis of PUI's Application for adjustment of rates and charges and related documents; assistance in preparing discovery questions, if needed; preparation of direct testimony; and technical assistance on issues related to certain revenue requirements, cost of service, rate design and the method used to charge certain commercial customers. Having been the project manager and expert witness for many wastewater utilities in several States and internationally, I have personal experience and expertise in the design of wastewater rates and their application to differing customer classes.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. This testimony presents my findings and the conclusions of my review of PUI's rate change application before the South Carolina Public Service Commission ("PSC"), Docket No. 2013-42-S, and the effect the proposed rate change would have on Sensor and J-Ray. My review focused on PUI's billing practices relative to Sensor and J-Ray and certain rate design and cost issues.

My review and this testimony are premised on the principle that the best capital improvement program for PUI (or any other utility) and operating cost structure are those that have the lowest total revenue

requirements (or least cost) to customers, while maintaining safe, reliable and adequate service. Additionally, rates should be designed in such a manner that, to the extent possible, charges to a particular customer are proportional to the cost of providing service to that customer. My review and the testimony provided herein may require supplementation or modification after review of additional documents or consideration of further testimony that may be submitted.

Q. WHAT IS YOUR PRESENT OCCUPATION?

A. I am a professional consultant specializing in utility management, economics and rates. I am the owner and founder of my own consulting business, Russell Consulting. I specialize in providing the following professional services to cities and towns, municipal utilities, regulatory agencies and consumer advocacy groups: management reviews and audits, needs assessment and facilities planning, utility economics and rate studies, determination of component and total revenue requirements, cost-of-service studies, demand management and conservation programs, expert witness services, utility contracts and negotiations, feasibility studies, system appraisals, and related regulatory or institutional studies.

Q. PLEASE SUMMARIZE YOUR TRAINING AND EXPERIENCE.

A. I have 40 years of experience as a professional engineer, utility manager and consultant. My formal education consists of a B.S. in Electrical Engineering from Rutgers College; an M.S. in Engineering Management from Northeastern University; and an M.A. in Economics from Rutgers University. I am a Registered Professional Engineer in the States of Massachusetts (Registration Number 28342), New Jersey (Registration Number 26512), and Florida (Registration Number 75247). For nearly all my career I have been actively involved in the management and control of utility businesses, from small public water systems to large multi-state, fully integrated, private electric companies.

I have provided expert witness testimony on many occasions before different state public utility commissions, legislative committees, and courts, including testimony on matters directly related to utility planning, forecasting and needs assessment, least cost planning, capital improvements, revenue requirements, cost of service studies and rate design, and demand management/conservation programs. I have testified before several state public utility commissions on numerous occasions and have been accepted as a utility rate expert in both water and wastewater cases.

Early in my career I was directly employed by two state regulatory agencies. I held the position of Chief Engineer for the Massachusetts

Department of Public Utilities for 2 years. While working at the Massachusetts Department of Public Utilities, I was assigned as a Hearings Officer in several cases; in that capacity I drafted orders for the Commissioners' consideration and approval.

After leaving that position, I worked in the private sector for 17 years, first as a Strategic Planner for General Public Utilities in New Jersey. While pursuing an advanced degree in economics, I was employed as a consultant to the Chief Economist of the New Jersey Board of Public Utilities. After that I was a manager in the Rate Department of Eastern Utilities Associates (EUA) Service Company. After EUA, I worked for Camp Dresser and McKee, Inc. as a Principal Management Consultant for 8 years. Next I was employed as the Manager of Regulatory Affairs for Unitil Service Company. In 1995 I started my own Consulting Company – ***RUSSELL CONSULTING*** – and have been its President and Principal Consultant since.

For over 25 years I have been an active member of the Water Environment Federation (WEF) and its regional affiliate—the New England Water Environment Association (NEWEA). Since 1985 I have also been an active member of the American Water Works Association (AWWA) and its regional affiliate—the New England Water Works Association (NEWWA). As a member of AWWA's Rates and Charges Committee, I have had responsibility for revising and updating three

Chapters of their publication entitled *Principles of Water Rates, Fees, and Charges* ("M1"), which last year was republished in its sixth edition.

For three years ending in September 2012, I held the position of Assistant Treasurer for NEWWA, which included serving on the Executive Committee and Board of Directors. I have been a member of NEWWA's Investment Committee for several years, and I have chaired the Financial Management Committee for many years. I am also a member of the Florida section of AWWA. For additional information regarding my education, training, and experience, please see my resume, attached hereto as **Exhibit DFR-1**.

Q. BEFORE GETTING INTO THE DETAILS, PLEASE SUMMARIZE YOUR PRINCIPAL FINDINGS AND CONCLUSIONS.

A. According to its Application, PUI intends to modify the manner in which it calculates the monthly wastewater bills for Sensor and J-Ray so that Sensor and J-Ray would be billed based upon the number of Single Family Equivalents ("SFE") for each restaurant. The number of SFEs for each restaurant would be determined by using the South Carolina Department of Health and Environmental Control ("DHEC") Guidelines for Unit Contributory Loading for Domestic Wastewater Treatment Facilities ("Guidelines") found at 25 S.C. Code Ann. § 61-67. The restaurants owned by Sensor and J-Ray are classified as fast food restaurants under the Guidelines. Calculating wastewater charges for Sensor and J-Ray

based on the Guidelines' loading factors will result in wastewater charges that are excessive, inequitable, and disproportionate to the cost of providing service.

Both Sensor and J-Ray utilize roughly 100,000 gallons of water per month, resulting in an equivalent or less amount of discharge of wastewater to the sewer system. Under the modified billing structure proposed by PUI, Sensor and J-ray will be charged as if they were using over 1,800,000 gallons per month. Thus, under the proposed rate modification, these customers will be charged for approximately 18 times more discharge than they are in fact producing. Such a rate calculation is not based on any reasonable comparison between the cost to serve a McDonald's and other customers that return the same level of wastewater to the sewer system. Such divergence between cost of service and billed amounts is inequitable and unreasonable.

Q. DO YOU HAVE ANY CONCERNS OR RESEVATIONS ABOUT PUI'S PROPOSED USE OF THE GUIDELINES FOR BILLING SENSOR AND J-RAY?

A. Yes, I do. While the Guidelines may be used appropriately for some customers as a basis for determining their bills, I do not believe that they are appropriate or reasonable as a basis for billing the two McDonald's customers on whose behalf I am appearing:

- The Guidelines were developed to be used for the design of wastewater system facilities and not to estimate average flow from customers; the two purposes are completely different.
- The Guideline's unit contributory loading factors are estimates of peak or maximum daily contributions per unit measure and do not represent average or typical use.
- The Guidelines are outdated having been originally issued over 40 years ago.
- As detailed below, there are other more appropriate and accurate billing methods available. For example, customers can be billed for their wastewater use based on metered water consumption.

Q. HOW DID YOU ARRIVE AT THESE CONCLUSIONS?

A. I will begin with some basics. First, most rate experts agree that, to the extent possible, charges to individual customers should reflect the relative costs of serving each customer. Thus, if it costs four times as much to serve customer A than customer B, then customer A's charges should be about four times greater than customer B's charges. Similarly, if the costs to serve customer A and customer B are about the same, their bills should be the same or at least reasonably close.

Second, assuming the wastewater streams received from two customers have similar strengths (pollutant levels), the best way to determine the relative costs of serving those two customers is to measure the amount of wastewater each contributes to the collection system. In fact, a large percentage of wastewater utilities bill their customers in proportion to the amount of wastewater each contributes to the collection system. These utilities estimate the level of wastewater contributed by each customer using the amount of metered water supplied to each customer. In most cases the percentage of water returned as wastewater is very high (on the order of 90% plus), and for those customers that don't return a large percentage other means are available to measure or estimate the amount that is not returned to the collection system. Therefore, this proxy measure (metered water consumption) is generally accepted as the best (and least cost) method of estimating relative wastewater contribution and is the preferred basis for billing customers for their contributed wastewater. This billing method assumes, of course, that a customer's metered water consumption is available at a reasonable cost.

Based on these basics, I will show that under PUI's proposed rate modification Sensor and J-Ray would be charged at levels that are at least an order of magnitude (10 times or more) above what is fair, equitable and reasonable.

Q. WHERE YOU ABLE TO DETERMINE THE LEVEL OF WATER CONSUMPTION FROM THESE TWO CUSTOMERS?

A Yes. The billed water consumption tallies for each of these two customers are listed on **Exhibit DFR-2** and **Exhibit DFR-3**, attached hereto. The average monthly water consumption for the Blythewood Road McDonald's for calendar year of 2012 was 86,000 gallons (rounded to the nearest one-thousands) with a range of 66,000 to 102,000 gallons. The average monthly water consumption for the McDonald's at 100 Clemson Road over the 12 months ending in April 2013 was 107,000 gallons with a typical range of 65,000 to 160,000 gallons. These monthly water consumption rates are fairly consistent and are not expected to increase significantly.

Q. HOW DOES THE INTERVENORS' ACTUAL WATER USE COMPARE TO THE USE THAT WOULD BE IMPUTED TO THEM UNDER PUI'S PROPOSED RATE MODIFICATION?

A If the Guidelines are used as proposed by PUI for billing for wastewater discharge, the Blythewood Road McDonald's would be billed as if it used 1,824,000 gallons per month. In its letter dated March 5, 2013 **(Exhibit DFR-4)**, PUI informed Sensor that PUI had calculated that the Blythewood Road McDonald's has 120 seats and serves 1,400 cars per day at its drive through. This equals 152 SFEs under the Guidelines, and each SFE is the equivalent of 400 gallons per day. Multiplying 152 SFEs

by 400 gallons per day by 30 days equates to a presumed usage of 1,824,000 gallons of water per month or 21,888,000 gallons per year. This is 21 times more than the Blythewood Road McDonald's actually used (monthly average) in the analyzed twelve month period. Even comparing the month where this customer had the highest monthly usage (102,000 gallons in July 2012), this customer would be billed under the proposed rate modification for the discharge of 18 times more wastewater discharged than they actually produced.

For the Clemson Road McDonald's, the average monthly water consumption was 107,000 gallons with a typical range of 65,000 to 160,000 gallons. These levels are also fairly consistent and are not expected to increase significantly. PUI estimates that this customer has 135 seats and 1,400 through cars per day. **(Exhibit DFR-5)** This equates to 153.5 SFEs. Again, using the Guideline for estimating their usage as requested by PUI, this customer would be billed as if it used 1,842,000 gallons per month (153.5 SFEs x 400 gpd per SFE x 30 days per month). This is 17 times more than they used on average during the analyzed 12 month period. Even using the high end of the of the typical monthly range (160,000 gallons in October 2012), the Clemson Road McDonald's would be charged for discharge of 11 times more wastewater discharged than it actually produced.

Q. HOW WOULD YOU CHARACTERIZE THESE FINDINGS FROM YOUR ANALYSIS?

A. In my opinion this analysis shows that these customers would be grossly overcharged for their sewer service under the proposed rate modification. Additionally, I conclude from this that application of the Guideline methodology of billing for these customers leads to charges that are not remotely related to the costs of providing service to them, resulting in charges that are inequitable and unreasonable.

Q. DO THE COMPANY'S RULES AND REGULATIONS ALLOW FOR ADJUSTMENTS IN THE GUIDELINES WHEN ACTUAL USE VARIES SIGNIFICANTLY FROM THE ESTIMATES THAT RESULT FROM APPLICATION OF THE SFE EQUIVALENCY METHODOLIOGY?

A. Yes, in fact they do. However, as currently written, only adjustments in one direction are allowed. Section 12 of PUI's Exhibit A (attached hereto as **Exhibit DFR-6**) only provides for adjustments that result in increased charges to the Company's customers—that is, when actual usage is determined to be significantly higher than the estimated level calculated using the SFE methodology. Such adjustments can only be initiated by PUI, and can only result in either not changing the methodology (i.e., keeping charges at the same level), or in increased charges by basing the charges going forward on billed water consumption. This provision benefits only the Company. Section 12 does not provide for

adjustments that would benefit the customer by lowering their bill based on water consumption in cases like those described above for the two McDonald's customers.

Q. HOW WOULD YOU CHARACTERIZE THIS SECTION (12) OF THE COMPANY'S RULES AND REGULATIONS?

A. This section as currently written is unfair and biased in favor of PUI. It would be appropriate and reasonable to allow adjustment in both directions. PUI should be allowed to adjust its billing for a customer that uses significantly more than what is estimated by the SFE methodology. Conversely to be equitable, a customer who uses significantly less than what is estimated by the SFE methodology, should (if verified) have their bills adjusted downward to closely match their actual usage (metered water consumption). What is fair and reasonable for PUI should also be fair and reasonable for the customer. It is simply unreasonable and inequitable to charge a customer for much more than they contribute to the system and for much more than it actually costs to serve that customer when it can be easily demonstrated that their actual usage is much less.

Q. DO YOU HAVE A RECOMMENDATION AS TO HOW THE TWO MCDONALD'S CUSTOMERS SHOULD BE BILLED?

A. Yes, I do. I recommend that the text of Section 12 be changed so that it allows billing adjustment for customers that can demonstrate that their actual usage is significantly less than the estimated usage calculated by application of the SFE methodology. For these Interveners, the billed usage should be based on their average metered water consumption over 12 consecutive months. PUI could use monthly metered water consumption for billing, or, if PUI is satisfied that the level of water consumption is relatively constant, it could use the average monthly usage over a 12 month period and update that average every one to three years. Alternatively, if metered water consumption is not obtainable at a reasonable cost, the formula applied to these types of restaurants using the SFE methodology should be adjusted to more accurately reflect average daily usage.

Q. DO YOU HAVE A RECOMMENDATION AS TO HOW THE SFE FORMULA SHOULD BE MODIFIED TO MORE ACCURATELY REFLECT ACTUAL USAGE OF THE TWO MCDONALD'S CUSTOMERS, IF THE COMPANY PREFERS TO STAY WITH THIS ESTIMATING METHODOLOGY?

A. Yes, I do. For estimating the number of SFEs for the FF-1 factor for Restaurants, I would lower the Hydraulic Loading estimate to 10 GPD per seat. Similarly, I would lower the Hydraulic Loading estimate to 2 GPD for every drive through customer. The current Hydraulic Loading estimates

for these customers need to be greatly reduced because they are in no way indicative of the average use of a customer patronizing such restaurants either on a per seat basis or a per car basis. These estimates were developed for a completely different reason. Specifically, they were developed to model a maximum possible use per day in order to insure that the collection and treatment facilities would be designed with enough capacity to be able to handle the highest possible maximum day total wastewater flow. Thus, while it may be reasonable for system design purposes to assume that the peak use of a drive through customer could result in as much as 40 gallons of water being returned to the collection system, the actual usage associated with many such customers would be much less, particularly if none of the passengers in the car enter the restaurant to use restroom facilities. For such customers that do not use the restroom facilities, their only associated use would be the amount of water needed to prepare their food and a proportionate share of the water used by employees for sanitary purposes. For an average drive through customer an estimate of 2 gallons is not unreasonable. For similar reasons, it is reasonable to assume that on a per seat basis for such restaurants that the average use per seat would be in the order of about 10 gallons per day. Some seats may be used several times a day while others may be only used a few times or not at all. Furthermore, the fact that for such restaurants, customers have the option of not having to enter

or use an inside seat greatly reduces the number of patrons that would use a particular seat on any given day.

Q. APPLYING YOUR MODIFIED ESTIMATES OF AVERAGE USAGE TO THE TWO MCDONALD'S CUSTOMERS WHAT ARE THE RESULTING MONTHLY USAGE ESTIMATES AND NUMBER OF SFES?

A. For the McDonald's customer at 250 Blythewood Road using my revised estimates would result in billing that customer as if the total wastewater discharge at that site is 120,000 gallons per month or 10 SFEs. This is somewhat higher than the average metered water use (86,000). However, the resulting number of SFEs would be reasonable and equitable, given that they are less than 2 times greater than metered use as opposed to 18 times greater using the Guideline method. Similarly, for the McDonald's customer at 100 Clemson Road, using my revised estimates would result in billing that customer as if the total wastewater discharge at that site was 124,500 gallons per month or 10.4 SFEs. This is close to the average metered water use (107,000 gallons) and therefore, the resulting number of SFEs would be reasonable and equitable. For all of these reasons, if the Company chooses not to use metered water consumption for billing these customers, it should use my modified Guideline estimates and apply the number of SFEs derived above. Again, these levels of use could be updated every 1 to 3 years as determined by PUI.

Q. MR. RUSSELL, DO YOU ANTICIPATE HAVING TO FILE OR PROVIDE SUPPLEMENTAL TESTIMONY IN THIS CASE?

A. Yes, I do. My review, answers, and the testimony provided herein may require supplementation or modification after review of additional documents or consideration of further testimony that may be submitted. Thus, it may be necessary to produce a supplement to this pre-filed direct testimony or to supplement the same at the hearing, and I would like to reserve the right to do so.

Q. MR. RUSSELL, DOES THAT CONCLUDE YOUR TESTIMONY AT THIS TIME?

A. Yes, it does.

Resume

DAVID F. RUSSELL, P.E.

CAREER SUMMARY:

Since the early 1970s Mr. Russell has been professionally involved in the management, control and regulation of public utilities in the Northeast. He has also successfully completed many related projects throughout the United States and Internationally. He has worked for two regulatory agencies; in MA. – the Department of Public Utilities – as its Chief Engineer; and in NJ. – the Board of Public Utilities – as a special consultant to the Chief Economist. He has held senior engineering and management positions for two New England electric utilities (Eastern Utilities Associates and Unitil Service Corp.), and one in NJ./PA.(General Public Utilities). He has also been a Principal Management Consultant for a major engineering company (Camp, Dresser & McKee, Inc.) at its headquarters in Boston/Cambridge, MA. for several years. Over the past 15 years he founded and developed a successful consulting business with an office centrally located in New England, about 30 minutes north of Boston, in Newburyport, MA. A second office was recently opened in Venice, Florida to serve clients in the southeast.

He is an Engineer and Economist by training (BSEE from Rutgers College), and has advanced degrees in Engineering Management (MS. from Northeastern Univ.) and Economics (MA. from Rutgers Univ.) specializing in resource and regulatory economics. He has testified before three of the six Public Utility Commissions in New England (and several others nationally) on many occasions as an expert on utility management, finance, rate design and cost of service studies, and related industry issues. He is a Registered Professional Engineer in MA. (License No. 28324) and NJ. (License No. 26512) and Florida (License No. 75247). He has authored several papers published in professional journals, and has presented his work at many professional seminars and industry conferences.

Mr. Russell has been a lead technical negotiator for several municipal clients in negotiating multi-million dollar contracts with private utilities and energy customers. He has prepared numerous reports and technical presentations for utility CEO's; and municipal, regional and state governments. He has been responsible for the planning, review and feasibility analysis of numerous utility capital improvement projects, totaling many billions of dollars. This included a broad spectrum of utility facilities (electric, gas, water, sewer and solid waste facilities) - production plants, transmission facilities, and distribution systems. He has also led teams of consultants in the appraisal of utility system components and entire systems (all assets). He has considerable international experience having worked for many other countries, including Mexico, Columbia, Egypt, Sri Lanka and the Bahamas. He is currently working for the Public Utilities Commission on the Island of Guam. For the Government of Egypt he has worked on several projects each of which involved the feasibility and implementation of public-private partnerships in both the water and wastewater sectors.

PROFESSIONAL EXPERIENCE:

RUSSELL CONSULTING
Public and Private Utility Consultant, 1995-Present

Provides management and financial consulting services to public and private utilities, municipalities, governmental agencies and private companies. Areas of expertise include management consulting, management reviews and audits, rate design and cost of service studies, expert witness services, appraisals of utility plant and equipment (including GASB-34 Compliance), utility contracts and negotiations, performance enhancement and benchmarking, utility economics, power markets and deregulation, and the feasibility and implementation of public-private partnerships. ***RUSSELL CONSULTING*** has teamed with other consulting firms to successfully complete several multi-disciplinary projects for International clients.

Unitil Service Corp.
Director of Regulatory Services, 1993-1994

Managed the staff and resources of the Regulatory Services Department for this regional utility holding company. Areas of functional responsibility included sales and load forecasting, customer and load research, rate research and analysis, rate design, rate and tariff administration, revenue requirements and cost of service studies, economic analysis, demand side management (DSM) planning, program design and evaluation, and related analytical services. Responsible for insuring that rates and cost recovery for the retail companies contributed positively to the continued financial strength of the corporation and that positive regulatory relations were maintained. Successfully developed and maintained expanded DSM programs in Massachusetts and New Hampshire. Also responsible for preparing and filing each retail company's Least Cost Integrated Resource Plans, covering a 10 year planning horizon, including the first Integrated Gas Resource Plan. Successfully managed and coordinated an external (PUC) audit of the accounting and control of all DSM expenditures by the affiliated retail companies in New Hampshire.

Camp, Dresser and McKee, Inc.
Principal Management Consultant, 1985-1993

Took a lead role in many projects including management audits, financial feasibility reports, privatization studies and rate/cost of service studies for a wide range of municipal and private utilities. Gained international experience as a financial advisor to the World Bank, the Governments of Egypt and Mexico, and the Water and Sewerage Authority of the Bahamas. Served as project manager for management audits. As Assistant Team Leader for the Management and Financial Services Group helped to expand its size and capabilities from four professional consultants to nearly 20 over a two year period.

Eastern Utilities Associates
Section Manager, 1982-1985

Responsible in the Rate Department for the development and implementation of several pass-through rate clauses designed to recover specific capital and operating costs based on customer demands and/or total use. These cost recovery mechanisms included fuel, purchased power and oil-conservation adjustment clauses. Was lead engineer for cost of service and rate design studies

prepared for rate cases involving affiliated retail electric companies. Also played a key role in rate filings before the Federal Energy Regulatory Commission for the Company's wholesale affiliate. Responsible for all PURPA-related programs for the Company's retail affiliates in Massachusetts and Rhode Island.

New Jersey Board of Public Utilities
Consultant, 1981-1982

Participated in the development of standard purchase and sale rates for cogeneration facilities and small powerplants as required by PURPA. Presented the staff's case on rate-of-return issues involving proposed rate increases by major electric and gas utilities. Assisted the Board's Chief Economist in the evaluation of mergers and acquisitions, and a major financing proposed by the State's largest electric utility needed to fund its capital improvement program.

General Public Utilities
Senior Engineer, 1978-1980

Provided in-house consulting services to the Corporate Planning Division. Instrumental in implementing the system-wide strategic planning process. Also assisted the Forecasting, Load Research and Supply Planning Groups in determining the need for new power plants and least-cost alternatives. This work included the development of the firm's conservation and load-management programs (the first in the industry).

Commonwealth of Massachusetts, Department of Public Utilities
Chief Engineer, 1971-1978

Reviewed, conducted public hearings and reported on the need for and costs of major construction projects proposed by electric and gas utilities including power plants, substations, transmission lines and gas storage facilities (LNG, SNG and Propane) and gas pipelines. Was instrumental in developing the State's gas-pipeline safety code and was responsible for the gas-pipeline safety program funded by the U.S. Department of Transportation. Also helped to design and implement the Cost of Gas Adjustment clause for all retail gas utilities. Managed the environmental review process, which included writing internal procedures, the Scope of Work for major facilities, and Statewide rules and regulations. Was appointed by the Governor to the Cogeneration Commission and the Public Power Commission.

RELATED PROFESSIONAL EXPERIENCE:

- Registered Professional Engineer in Massachusetts (28342), New Jersey (26512) and Florida (75247).
- Author of several papers published in professional journals.
- Numerous presentations at regional and national meetings of professional organizations.
- Provided expert testimony in numerous quasi-judicial proceedings before several state public utility commissions, state legislative committees and a state Superior Court.
- Part-time instructor at Boston University teaching undergraduate and graduate courses in Economics, Management Science and Finance.

PROFESSIONAL MEMBERSHIPS:

- American Public Power Association
- Water Environment Federation (WEF) (Member of the Management & Admin. Committee) and the New England Water Environment Association (NEWEA)
- American Water Works Association, Member of the Rates sand Charges Committee (responsible for 3 Chapters of the revised M1, "Rates" Manual), also a member of the Florida Section.
- City of Newburyport Chamber of Commerce
- International Water Resources Association (Peer Review Editor)
- Inst. of Electrical and Electronics Engineers (Power Engr. & Engr. Management Sections)
- National Society of Professional Engineers
- New England Water Works Association, Assistant Treasurer (Assoc. Officer) - Member of the Executive Committee and the Board of Directors; Member of the Financial Mngt. (Co-Chairman) Comm., the Conservation (Chairman) Comm., and the Investment Comm.
- Rutgers Engineering Society

EDUCATION:

- Rutgers University, MA in Economics (Resource and Regulatory Economics), Research Assistantship with Full Scholarship, 1984
- Northeastern University, MS in Engr. Management (Opers. Res. & Finance), 1977
- Rutgers College, BS in Electrical Engineering, Alumni Scholarship (full tuition and expenses), 1971

PUBLICATIONS\PRESENTATIONS: Author of several papers published in professional journals and presentations given at regional and national conventions.

EXPERT WITNESS SERVICES: Provided expert testimony in numerous quasi-judicial proceedings before several State Public Utility Commissions, and Legislative Committees. Also, presented expert testimony in a litigated proceeding before the New Hampshire Superior Court. Areas of expertise include many of the issues and topics outlined above.

COMMUNITY SERVICE: Chairman of the Planning Board, City of Newburyport, Ma.; Commissioner – Newburyport Harbor Commission; Chairman of the Mayor's Special Task Force on Police Facilities (rebuilt and doubled the size of the City's 70 year old Police Station); Member of the Merrimack Valley Planning Commission; I.C. Parish Council; Treasurer for the City Committee (Major Political Party); and Treasurer for the region's State Representative.

ADJUNCT PROFESSOR: Part-time instructor at Boston University teaching Undergraduate and Graduate courses in Economics, Management Science and Finance.

WHO'S WHO IN AMERICA: His biography was included in the Millennium and all subsequent Editions of Marquis' Who's Who in the America.

PERSONAL: U.S. Citizen - Married, three children - Golfer/Runner/Coach (youth athletics)
FED. ID#: 04-3568177 1st Lt., U.S Army NG (Inactive Res.)

	Water Consumption					
McDonald's - 250 Blythewood Road						
From		To		Gallons Billed		Cubic Feet
12/15/2011		1/13/2012		90,000		12,000
1/13/2012		2/10/2012		66,000		8,800
2/10/2012		3/12/2012		84,000		11,200
3/12/2012		4/10/2012		93,000		12,400
4/10/2012		5/10/2012		84,000		11,200
5/10/2012		6/5/2012		70,000		9,333
6/5/2012		7/6/2012		95,000		12,667
7/6/2012		8/7/2012		102,000		13,600
8/7/2012		9/7/2012		87,000		11,600
9/7/2012		10/5/2012		74,000		9,867
10/5/2012		11/8/2012		95,000		12,667
11/8/2012		12/11/2012		88,000		11,733
		Total		1,028,000		137,067
		Average		85,667		11,422

	Water Consumption			
McDonald's - 100 Clemson Avenue				
From	To	Gallons Billed		Cubic Feet
5/3/2012	6/1/2012	65,250		8,700
6/1/2012	7/2/2102	92,250		12,300
7/2/2102	8/2/2012	99,000		13,200
8/2/2012	9/5/2012	125,250		16,700
9/5/2012	10/2/2012	301,500		40,200
10/2/2012	10/30/2012	156,750		20,900
10/30/2012	12/3/2012	-		0
12/3/2012	1/7/2013	135,750		18,100
1/7/2013	2/4/2013	83,250		11,100
2/4/2013	3/5/2013	105,750		14,100
3/5/2013	4/3/2013	49,500		6,600
4/3/2013	5/3/2013	70,500		9,400
	Total	1,284,750		171,300
	Average	107,063		14,275

Palmetto Utilities, Inc.

March 5, 2013

Dear Customer,

We are writing to you to make you aware of some changes in the amount of your monthly bill from Palmetto Utilities, Inc. ("PUI") for wastewater services that will be reflected in your next billing statement.

As you may be aware, your monthly wastewater bill is determined by the number of single family equivalents, or SFEs for your service premises, which is determined by a provision in our rate schedule which is based upon a regulation promulgated by the South Carolina Department of Health and Environmental Control ("DHEC") and approved by the Public Service Commission of South Carolina ("PSC"). Under this rate schedule provision, an SFE is defined as follows:

"A Single Family Equivalent (SFE) shall be determined by using the South Carolina Department of Environmental Control Guidelines for Unit Contributory Loading for Domestic Wastewater Treatment Facilities --25 S.C. Code Ann. Regs. 61-67 Appendix A (Supp. 2010), as may be amended from time to time."

In order to bill all customers for service in accordance with the terms of our rate schedule, which is required under PSC regulations, PUI finds it necessary to periodically update our SFE computations to ensure accurate billing. For this reason, we have recently conducted a study of our commercial accounts in order to verify that we are using the proper SFE rating for each of our commercial customers. This process generally includes a recent visit to your service premises by a PUI representative to inspect and ascertain the existence and extent of the loading factors required to be used in the computation of your monthly service charge based upon the number of SFEs outlined in the DHEC Contributory Loading Guidelines mentioned above. For your convenience we have attached a copy of those Loading Guidelines to this letter (see Appendix A).

Our inspection of your service premises indicates the following loading factors, resulting in the single family equivalency rating shown below and the impact they have on your monthly wastewater bill using PUI's existing rate of $33.00 per SFE.

Establishment Identifier: McDonalds
Establishment Address: 250 BLYTHEWOOD RD

	Type of Establishment	Driver	Loading Factors	Hydraulic Loading (GPD)	SFE's
Code(s) used for Calculation	FF	FF(not 24 hr) S	120	40.00	12.00
of Loading Factor(s) in	FF	Drive in (cars s	1400	40.00	140.00
Appendix A of R.61-67:					

New SFE Total Resulting from Study	**152.00**
Old SFE Total	11.59
Increase/(Decrease) of Monthly Bill	**$ 4,633.53**

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Palmetto Utilities, Inc.

While PSC regulations entitle PUI to back bill (for a period of between 6 and 36 months depending upon the circumstances) for amounts that were under-billed as illustrated in the calculation above, we have elected not to do so at this time.

The results of our review of your account and inspection of the service premises will also be used in an upcoming rate application PUI will be filing with the PSC. Accordingly, it is important to both you and PUI that the most accurate information available for SFEs associated with your service account be available to us. Therefore, we would appreciate your providing any comments on the nature of your establishment and the accuracy of the loading factors used above.

We thank you in advance for your participation in this process. Your input is vitally important in determining the correct number of SFEs applicable to your business and for that reason we ask that you provide any comments regarding the information above provided no later than Friday, March 29, 2013. Please send responses to Rick Melcher at rmelcher@niamerica.com.

If you have any questions or need any additional information please contact Rick Melcher by email at the address above.

Respectfully,

Palmetto Utilities, Inc.

Attachment: DHEC Regulation 61-67, Appendix A

1710 Woodcreek Farms Road • Elgin, South Carolina 29045 • (803) 699-2422 • Fax (803) 699-2423

South Carolina Department of Health and Environmental Control R.61-67, Appendix A

Unit Contributory Loadings to All Domestic Wastewater Treatment Facilities

Type of Establishment	Hydraulic Loading (GPD)
A. Airport	
1 Per Employee	10
2 Per Passenger	5
B. Apartments, Condominiums, Patio Homes:	
1 Three (3) Bedrooms (Per Unit)	400
2 Two (2) Bedrooms (Per Unit)	300
3 One (1) Bedroom (Per Unit)	200
C. Assembly Halls: (Per Seat)	5
D. Barber Shop:	
1 Per Employee	10
2 Per Chair	100
E. Bars, Taverns:	
1 Per Employee	10
2 Per Seat, Excluding Restaurant	40
F. Beauty Shop:	
1 Per Employee	10
2 Per Chair	125
G. Boarding House, Dormitory: (Per Resident)	50
H. Bowling Alley:	
1 Per Employee	10
2 Per Lane, No Restaurant, Bar or Lounge	125
I. Camps:	
1 Resort, Luxury (Per Person)	100
2 Summer (Per Person)	50
3 Day, with Central Bathhouse (Per Person)	35
4 Travel Trailer (Per Site)	175
J. Car Wash: (Per Car Washed)	75
K. Churches: (Per Seat)	3
L. Clinics, Doctor's Offices:	
1 Per Employee	15
2 Per Patient	5
M. Country Club, Fitness Center, Spa: (Per Member)	50
N. Dentist Office:	
1 Per Employee	15
2 Per Chair	8
3 Per Suction Unit; Standard Unit	370
4 Per Suction Unit; Recycling Unit	85
5 Per Suction Unit; Air Generated Unit	0
O. Factories, Industries:	
1 Per Employee	25
2 Per Employee with Showers	35
3 Per Employee with Kitchen	40
4 Per Employee with Showers and Kitchen	45
P. Fairgrounds: (Average Attendance, Per Person)	5
Q. Grocery Stores (Per 1,000 Square Feet, No Restaurant)	200
R. Hospitals:	
1 Per Resident Staff	100
2 Per Bed	200
S. Hotels: (Per Bedroom, No Restaurant)	100
T. Institutions: (Per Resident)	100
U. Laundries: (Self Service, Per Machine)	400
V. Marinas: (Per Slip)	30
W. Mobile Homes: (Per Unit)	300
X. Motels: (Per Unit, No Restaurant)	100
Y. Nursing Homes:	
1 Per Bed	100
2 Per Bed, with Laundry	150
Z. Offices, Small Stores, Business, Administration Buildings: (Per Person, No Restaurant)	25
AA. Picnic Parks: (Average Attendance Per Person)	10
BB. Prison/Jail:	
1 Per Employee	15
2 Per Inmate	125
CC. Residences: (Per House, Unit)	400
DD. Rest Areas, Welcome Centers:	
1 Per Person	5
2 Per Person, with Showers	10
EE. Rest Homes:	
1 Per Bed	100
2 Per Bed, with Laundry	150
FF. Restaurants:	
1 Fast Food Type, Not 24 Hours (Per Seat)	40
2 24 Hour Restaurant (Per Seat)	70
3 Drive - In (Per Car Served)	40
4 Vending Machine, Walk-Up Deli (Per Person)	40
GG. Schools, Day Care:	
1 Per Person	10
2 Per Person with Cafeteria	15
3 Per Person with Cafeteria, Gym, and Showers	20
HH. Service Stations:	
1 Per Employee	10
2 Per Car Serviced	10
3 Car Wash (Per Car Wash)	75
II. Shopping Centers, Large Department Stores, Malls: (Per 1,000 Square Feet, No Restaurant)	200
JJ. Stadiums, Coliseums: (Per Seat, No Restaurant)	5
KK. Swimming Pools: (Per Person, with Sewer Facilities and Showers)	10
LL. Theaters: Indoor (Per Seat), Drive In (Per Stall)	5

Palmetto Utilities, Inc.

March 5, 2013

Dear Customer,

We are writing to you to make you aware of some changes in the amount of your monthly bill from Palmetto Utilities, Inc. ("PUI") for wastewater services that will be reflected in your next billing statement.

As you may be aware, your monthly wastewater bill is determined by the number of single family equivalents, or SFEs for your service premises, which is determined by a provision in our rate schedule which is based upon a regulation promulgated by the South Carolina Department of Health and Environmental Control ("DHEC") and approved by the Public Service Commission of South Carolina ("PSC"). Under this rate schedule provision, an SFE is defined as follows:

"A Single Family Equivalent (SFE) shall be determined by using the South Carolina Department of Environmental Control Guidelines for Unit Contributory Loading for Domestic Wastewater Treatment Facilities --25 S.C. Code Ann. Regs. 61-67 Appendix A (Supp. 2010), as may be amended from time to time."

In order to bill all customers for service in accordance with the terms of our rate schedule, which is required under PSC regulations, PUI finds it necessary to periodically update our SFE computations to ensure accurate billing. For this reason, we have recently conducted a study of our commercial accounts in order to verify that we are using the proper SFE rating for each of our commercial customers. This process generally includes a recent visit to your service premises by a PUI representative to inspect and ascertain the existence and extent of the loading factors required to be used in the computation of your monthly service charge based upon the number of SFEs outlined in the DHEC Contributory Loading Guidelines mentioned above. For your convenience we have attached a copy of those Loading Guidelines to this letter (see Appendix A).

Our inspection of your service premises indicates the following loading factors, resulting in the single family equivalency rating shown below and the impact they have on your monthly wastewater bill using PUI's existing rate of $33.00 per SFE.

Establishment Identifier: McDonald's, J-Ray Inc dba
Establishment Address: 100 CLEMSON ROAD

	Type of Establishment	Driver	Loading Factors	Hydraulic Loading (GPD)	SFE's
Code(s) used for Calculation of Loading Factor(s) in Appendix A of R.61-67:	FF	FF(not 24 hr) S	135	40.00	13.50
	FF	Drive in (cars s	1400	40.00	140.00

New SFE Total Resulting from Study	**153.50**
Old SFE Total	24.45
Increase/(Decrease) of Monthly Bill	**$ 4,258.65**

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Palmetto Utilities, Inc.

While PSC regulations entitle PUI to back bill (for a period of between 6 and 36 months depending upon the circumstances) for amounts that were under-billed as illustrated in the calculation above, we have elected not to do so at this time.

The results of our review of your account and inspection of the service premises will also be used in an upcoming rate application PUI will be filing with the PSC. Accordingly, it is important to both you and PUI that the most accurate information available for SFEs associated with your service account be available to us. Therefore, we would appreciate your providing any comments on the nature of your establishment and the accuracy of the loading factors used above.

We thank you in advance for your participation in this process. Your input is vitally important in determining the correct number of SFEs applicable to your business and for that reason we ask that you provide any comments regarding the information above provided no later than Friday, March 29, 2013. Please send responses to Rick Melcher at rmelcher@niamerica.com.

If you have any questions or need any additional information please contact Rick Melcher by email at the address above.

Respectfully,

Palmetto Utilities, Inc.

Attachment: DHEC Regulation 61-67, Appendix A

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South Carolina Department of Health and Environmental Control R.61-67, Appendix A

Unit Contributory Loadings to All Domestic Wastewater Treatment Facilities

Type of Establishment	Hydraulic Loading (GPD)
A. Airport	
1 Per Employee	10
2 Per Passenger	5
B. Apartments, Condominiums, Patio Homes:	
1 Three (3) Bedrooms (Per Unit)	400
2 Two (2) Bedrooms (Per Unit)	300
3 One (1) Bedroom (Per Unit)	200
C. Assembly Halls: (Per Seat)	5
D. Barber Shop:	
1 Per Employee	10
2 Per Chair	100
E. Bars, Taverns:	
1 Per Employee	10
2 Per Seat, Excluding Restaurant	40
F. Beauty Shop:	
1 Per Employee	10
2 Per Chair	125
G. Boarding House, Dormitory: (Per Resident)	50
H. Bowling Alley:	
1 Per Employee	10
2 Per Lane, No Restaurant, Bar or Lounge	125
I. Camps:	
1 Resort, Luxury (Per Person)	100
2 Summer (Per Person)	50
3 Day, with Central Bathhouse (Per Person)	35
4 Travel Trailer (Per Site)	175
J. Car Wash: (Per Car Washed)	75
K. Churches: (Per Seat)	3
L. Clinics, Doctor's Office:	
1 Per Employee	15
2 Per Patient	5
M. Country Club, Fitness Center, Spa: (Per Member)	50
N. Dentist Office:	
1 Per Employee	15
2 Per Chair	8
3 Per Suction Unit; Standard Unit	370
4 Per Suction Unit; Recycling Unit	95
5 Per Suction Unit; Air Generated Unit	0
O. Factories, Industries:	
1 Per Employee	25
2 Per Employee with Showers	35
3 Per Employee with Kitchen	40
4 Per Employee with Showers and Kitchen	45
P. Fairgrounds: (Average Attendance, Per Person)	5
Q. Grocery Stores (Per 1,000 Square Feet, No Restaurant)	200
R. Hospitals:	
1 Per Resident Staff	100
2 Per Bed	200
S. Hotels: (Per Bedroom, No Restaurant)	100
T. Institutions: (Per Resident)	100
U. Laundries: (Self Service, Per Machine)	400
V. Marinas: (Per Slip)	30
W. Mobile Homes: (Per Unit)	300
X. Motels: (Per Unit, No Restaurant)	100
Y. Nursing Homes:	
1 Per Bed	100
2 Per Bed, with Laundry	150
Z. Offices, Small Stores, Business, Administration Buildings: (Per Person, No Restaurant)	25
AA. Picnic Parks: (Average Attendance Per Person)	10
BB. Prison/Jail:	
1 Per Employee	15
2 Per Inmate	125
CC. Residences: (Per House, Unit)	400
DD. Rest Areas, Welcome Centers:	
1 Per Person	5
2 Per Person, with Showers	10
EE. Rest Homes:	
1 Per Bed	100
2 Per Bed, with Laundry	150
FF. Restaurants:	
1 Fast Food Type, Not 24 Hours (Per Seat0	40
2 24 Hour Restaurant (Per Seat)	70
3 Drive - In (Per Car Served)	40
4 Vending Machine, Walk-up Deli (Per Person)	40
GG. Schools, Day Care:	
1 Per Person	10
2 Per Person with Cafeteria	15
3 Per Person with Cafeteria, Gym, and Showers	20
HH. Service Stations:	
1 Per Employee	10
2 Per Car Serviced	10
3 Car Wash (Per Car Wash)	75
II. Shopping Centers, Large Department Stores, Malls: (Per 1,000 Square Feet, No Restaurant)	200
JJ. Stadiums, Coliseums: (Per Seat, No Restaurant)	5
KK. Swimming Pools: (Per Person, with Sewer Facilities and Showers)	10
LL. Theaters: Indoor (Per Seat), Drive In (Per Stall)	5

schedule, complying with the guidelines and standards hereof, and, where appropriate, agreeing to pay an acceptable amount for multi-tap capacity.

11. **CONTRACTS FOR MULTI-TAP CAPACITY**

The Utility shall have no obligation to modify or expand its plant, other facilities or mains to treat the sewerage of any person or entity requesting multi-taps (a commitment for five or more taps) unless such person or entity first agrees to pay an acceptable amount to the Utility to defray all or a portion of the Utility's costs to make modifications or expansions thereto.

12. **SINGLE FAMILY EQUIVALENT**

A Single Family Equivalent (SFE) shall be determined by using the South Carolina Department of Environmental Control Guidelines for Unit Contributory Loading for Domestic Wastewater Treatment Facilities --25 S.C. Code Ann. Regs. 61-67 Appendix A (Supp. 2010), as may be amended from time to time. Where the Utility has reason to suspect that a person or entity is exceeding design loadings established by the Guidelines for Unit Contributory Loadings for Domestic Wastewater Treatment Facilities, the Utility shall have the right to request and receive water usage records from the provider of water to such person or entity. Also, the Utility shall have the right to conduct an "on premises" inspection of the customer's premises. If it is determined that actual flows or loadings are greater than the design flows or loadings, then the Utility shall recalculate the customer's equivalency rating based on actual flows or loadings and thereafter bill for its services in accordance with such recalculated loadings.